

Claims

What is claimed is:

1. A musical instrument comprising:

2 a melody string;

a plurality of drone strings, wherein each drone string of said plurality of drone strings

4 has an associated pitch;

a melody string transducer associated with said melody string, wherein said melody
6 string transducer generates an electrical melody string signal in response to vibrations of said
melody string;

8 a drone string transducer associated with one or more drone strings of said plurality of
drone strings, wherein said drone string transducer generates an electrical drone string signal in
10 response to vibrations of said associated one or more drone strings;

a plurality of curved frets coupled to a neck of said musical instrument, wherein each fret
12 of said plurality of curved frets is adapted to distinctly change the vibrating length of said
melody string in response to user manipulation; and

14 an interface adapted to provide electrical signals generated by said drone string
transducer and said melody string transducer to a multi-channel mixer which responsively
16 generates an outgoing audio output signal comprising a mix of received electrical signals.

2. The instrument according to claim 1, said instrument further comprising:

2 a signal processor for generating one or more output signals responsive to at least one
electrical signal generated by said drone string transducer; and wherein

4 said interface is further adapted to provide said one or more output signals generated by
said signal processor to said multi-channel mixer.

3. The instrument according to claim 1, said instrument further comprising:

2 a signal processor for generating one or more output signals responsive to at least one electrical signal generated by said melody string transducer; and wherein

4 said interface is further adapted to provide said one or more output signals generated by said signal processor to said multi-channel mixer.

4. The instrument according to claim 1, said instrument further comprising:

2 a plurality of drone string transducers, wherein each drone string transducer of said plurality of drone string transducers is associated with a particular drone string of said plurality of drone strings, wherein each drone string transducer of said plurality of drone string transducers generates a distinct electrical drone string signal in response to vibrations of said associated drone string; and wherein

6 said interface is further adapted to provide electrical transducer signals, generated by each drone string transducer of said plurality of drone string transducers, to said multi-channel mixer.

5. The instrument according to claim 4, said instrument further comprising:

2 a drone string signal processor associated with one or more drone string transducers of said plurality of said drone string transducers, wherein said drone string processor processes a received electrical drone string signal generated by said associated one or more drone string transducers to produce an output signal; and wherein

6 said interface is further adapted to provide said output signal to said multi-channel mixer.

6. The instrument according to claim 5, wherein said processing performed by said

2 drone string signal processor includes controllably performing pitch shifts on said received electrical drone string signal.

7. The instrument according to claim 4, said instrument further comprising:

a plurality of drone string signal processors, wherein each processor of said plurality of drone string signal processors is associated with a particular drone string transducer of said plurality of said drone string transducers, wherein each processor of said plurality of drone string signal processors processes a received electrical drone string signal from an associated drone string transducer to produce an output signal, and wherein

said interface is further adapted to provide said output signal, for each of said plurality of drone string signal processors, to said multi-channel mixer.

8. The instrument according to claim 1, said instrument further comprising:

a plurality of melody strings;

a plurality of melody string transducers, wherein each melody string transducer of said plurality of melody string transducers is associated with a particular melody string of said plurality of melody strings, where each melody string transducer of said plurality of melody string transducers generates a distinct electrical melody string signal in response to vibrations of said associated melody string; and wherein

said interface is further adapted to provide electrical signals, generated by each melody string transducer of said plurality of said melody string transducers, to said multi-channel mixer.

9. The instrument according to claim 8, said instrument further comprising:

a melody string signal processor associated with one or more melody string transducers of said plurality of melody string transducers, wherein said melody string signal processor processes a received electrical melody string signal generated by said associated one or more melody string transducers to produce an output signal; and wherein

said interface is further adapted to provide said output signal to said multi-channel mixer.

10. The instrument according to claim 9, wherein said processing performed by said

melody string signal processor includes controllably performing pitch shifts on said received electrical drone string signal.

11. The instrument according to claim 1, wherein said multi-channel mixer generates
2 a submix signal comprising a submix of said electrical signals generated by said drone string
transducer and said melody string transducer, said instrument further comprising:
4 an auxiliary signal processor for generating a processed submix signal responsive to said
submix signal, wherein said processed submix signal is communicated to said multi-channel
6 mixer which responsively generates an outgoing audio signal comprising a mix of said processed
submix signal and said electrical signals generated by said drone string transducer and said
8 melody string transducer.

12. The instrument according to claim 4, wherein said processed submix signal
2 comprises a synthetic resonance characteristic.

13. The instrument according to claim 4, wherein said processed submix signal
2 comprises a synthetic twang characteristic.

14. The instrument according to claim 4, wherein said processed submix signal
2 comprises synthetic vowel sound characteristics.

15. The instrument according to claim 14, wherein said synthetic vowel sound
2 characteristics are variably responsive to incoming control signals.

16. The instrument according to claim 15, said instrument further comprising:
2 a user interface generating said incoming control signals in response to user interaction
with said user interface.

17. The instrument according to claim 1, said instrument further comprising:

a plurality of sympathetic strings;

a sympathetic string transducer associated with one or more strings of said plurality of

sympathetic strings, wherein said sympathetic string transducer generates an electrical
sympathetic string signal in response to vibrations of said associated one or more sympathetic

strings; and

an auxiliary signal processor for generating a processed sympathetic string signal

responsive to said sympathetic string signal, wherein said processed sympathetic string signal is
communicated to said multi-channel mixer.

18. The instrument according to claim 17, said instrument further comprising:

a plurality of sympathetic string transducers, wherein each sympathetic string transducer

of said plurality of sympathetic string transducers is associated with a particular sympathetic

string of said plurality of sympathetic strings, wherein each sympathetic string transducer of said
plurality of sympathetic string transducers generates a distinct electrical sympathetic string signal

in response to vibrations of said associated sympathetic string; and wherein

said interface is further adapted to provide electrical signals, generated by each

sympathetic string transducer of said plurality of sympathetic string transducers, to said multi-
channel mixer.

19. The instrument according to claim 18, said instrument further comprising:

a sympathetic string signal processor associated with one or more sympathetic string

transducers of said plurality of said sympathetic string transducers, wherein said sympathetic

string processor processes a received electrical sympathetic string signals generated by said
associated one or more sympathetic string transducers to produce an sympathetic string output

signal; and wherein

said interface is further adapted to provide said sympathetic string output signal to said

multi-channel mixer.

20. The instrument according to claim 19, wherein said processing performed by said
2 sympathetic string signal processor includes controllably performing pitch shifts on said received
electrical sympathetic string signal.

21. The instrument according to claim 1, said instrument further comprising:
2 a plurality of chikori strings;
a chikori string transducer associated with one or more strings of said plurality of chikori
4 strings, wherein said chikori string transducer generates an electrical chikori string signal in
response to vibrations of said associated one or more chikori strings; and
6 an auxiliary signal processor for generating a processed chikori string signal responsive
to said chikori string signal, wherein said processed chikori string signal is communicated to said
8 multi-channel mixer.

22. The instrument according to claim 21, said instrument further comprising:
2 a plurality of chikori string transducers, wherein each chikori string transducer of said
plurality of chikori string transducers is associated with a particular chikori string of said
4 plurality of chikori strings, wherein each chikori string transducer of said plurality of chikori
string transducers generates a distinct electrical chikori string signal in response to vibrations of
6 said associated chikori string; and wherein
said interface is further adapted to provide electrical signals, generated by each chikori
8 string transducer of said plurality of chikori string transducers, to said multi-channel mixer.

23. The instrument according to claim 22, said instrument further comprising:
2 a chikori string signal processor associated with one or more chikori string transducers of
said plurality of said chikori string transducers, wherein said chikori string signal processor
4 processes a received electrical chikori string signal generated by said associated one or more
chikori string transducers to produce a chikori string output signal; and wherein
6 said interface is further adapted to provide said chikori string output signal to said multi-
channel mixer.

24. The instrument according to claim 23, wherein said processing performed by said
2 chikori string signal processor includes controllably performing pitch shifts on said received
electrical chikori string signal.

25. The instrument according to claim 1, said instrument further comprising:
2 a plurality of harp strings;
a harp string transducer associated with one or more strings of said plurality of harp
4 strings, wherein said harp string transducer generates an electrical harp string signal in response
to vibrations of said associated one or more harp strings; and
6 an auxiliary signal processor for generating a processed harp string signal responsive to
said harp string signal, wherein said processed harp string signal is communicated to said multi-
8 channel mixer.

26. The instrument according to claim 25, said instrument further comprising:
2 a plurality of harp string transducers, wherein each harp string transducer of said plurality
of harp string transducers is associated with a particular harp string of said plurality of harp
4 strings, wherein each harp string transducer of said plurality of harp string transducers generates
a distinct electrical harp string signal in response to vibrations of said associated harp string; and
6 wherein
said interface is further adapted to provide electrical signals, generated by each harp
8 string transducer of said plurality of harp string transducers, to said multi-channel mixer.

27. The instrument according to claim 26, said instrument further comprising:
2 a harp string signal processor associated with one or more harp string transducers of said
plurality of said harp string transducers, wherein said harp string signal processor processes a
4 received electrical harp string signal generated by said associated one or more harp string
transducers to produce a harp string output signal; and wherein
6 said interface is further adapted to provide said harp string output signal to said multi-
channel mixer.

28. The instrument according to claim 27, wherein said processing performed by said
2 harp string signal processor includes controllably performing pitch shifts on said received
electrical harp string signal.

29. The instrument according claim 25, wherein each harp string of said plurality of
2 harp strings comprise bass-pitched strings.

30. The instrument according to claim 1, wherein said multi-channel mixer
2 responsively generates a plurality of outgoing audio output signals, wherein each output signal of
said plurality of outgoing audio output signals comprises a mix of said received electrical
4 signals.

31. The instrument according to claim 30, wherein each output signal of said plurality
2 of outgoing audio output signals results in a spatial sound distribution of said received electrical
signals.

32. The instrument according to claim 1, wherein said drone string transducer or said
2 melody string transducer, or both, comprise a piezo transducer.

33. The instrument according to claim 1, wherein said drone string transducer or said
2 melody string transducer, or both, comprise an optical transducer.

34. The instrument according to claim 1, wherein at least one drone string of said
2 plurality of drone strings comprises a brass string.

35. The instrument according to claim 1, said instrument further comprising:
2 a multi-channel MIDI interface adapted to selectively convert any of said electrical
transducer signals generated by said drone string transducer and said melody string transducer
4 into an outgoing MIDI signal.

36. The instrument according to claim 1, said instrument further comprising:

2 a miniature melodic keyboard comprising a plurality of keys, wherein user operation of
one or more keys of said plurality of keys causes the generation of an outgoing MIDI signal
4 responsive to said user operation.

37. The instrument according to claim 1, said instrument further comprising:

2 a strumpad comprising a plurality of touch switches, wherein user contact with one or
more touch switches of said plurality of touch switches causes the generation of an outgoing
4 MIDI signal responsive to said user contact.

38. The instrument according to claim 1, said instrument further comprising:

2 a switch adapted to generate an outgoing MIDI signal in response to user operation.

39. The instrument according to claim 1, said instrument further comprising:

2 a potentiometer adapted to generate an outgoing MIDI signal in response to user
operation.

40. The instrument according to claim 1, said instrument further comprising:

2 a pushbutton adapted to generate an outgoing MIDI signal in response to user operation.

41. The instrument according to claim 1, said instrument further comprising:

2 a sensor adapted to generate an outgoing MIDI signal in response to user contact.

42. The instrument according to claim 1, said instrument further comprising:

2 a bow comprising a bow fiber and an associated motion sensor adapted to generate an
outgoing MIDI signal in response to physical motion of said bow.

43. The instrument according to claim 1, said instrument further comprising:

2 a bow comprising a bow fiber and an associated pressure sensor adapted to generate an
outgoing MIDI signal in response to physical pressure applied to said bow fibers.

44. The instrument according to claim 1, said instrument further comprising:
2 a bow comprising an associated contact sensor adapted to generate an outgoing MIDI
signal in response to user contact with sensor.

45. The instrument according to claim 1, said instrument further comprising:
2 a physical controller device adapted to generate an outgoing MIDI signal in response to
user operation, wherein said outgoing MIDI signal is provided to an external musical control
4 system.

46. The instrument according to claim 45, wherein said external musical control
2 system comprises a music synthesizer, wherein said outgoing MIDI signals is adapted to control
sounds generated by said music synthesizer.

47. The instrument according to claim 45, wherein said external musical control
2 system comprises a signal processing system, wherein said outgoing MIDI signals is adapted to
control said signal processing system.

48. The instrument according to claim 45, wherein said external musical control
2 system comprises a lighting system, wherein said outgoing MIDI signals is adapted to control
lights provided by said lighting system.

49. The instrument according to claim 17, said instrument further comprising:
2 a drive transducer adapted to responsively induce vibration in one or more strings of said
plurality of sympathetic strings.

50. The instrument according to claim 1, said instrument further comprising:
2 a drive transducer adapted to responsively induce vibration in one or more strings of said
plurality of drone strings.

2 51. The instrument according to claim 1, said instrument further comprising:
a drive transducer adapted to responsively induce vibration in said melody string.

2 52. The instrument according to claim 1, said instrument further comprising:
2 a sensor generating an outgoing sensor signal in response to user contact, wherein said
outgoing sensor signal is adapted to control percussion sounds generated by an external sound
4 generation system.

2 53. The instrument according to claim 52, wherein said sensor comprises an impact
sensor.

2 54. The instrument according to claim 52, wherein said sensor comprises a
null/contact sensor.

2 55. The instrument according to claim 52, wherein said sensor comprises a pressure
sensor array.

2 56. The instrument according to claim 52, wherein said outgoing sensor signal is used
to trigger the synthesis of percussion sounds generated by said external sound generation system.

2 57. The instrument according to claim 52, wherein said outgoing sensor signal is used
to trigger the playback of percussion sounds stored on said external sound generation system.

58. A music generating method comprising:

2 providing a melody string and a plurality of drone strings, wherein each drone string of
said plurality of drone strings has an associated pitch;

4 associating a melody string transducer with said melody string, wherein said melody
string transducer generates an electrical melody string signal in response to vibrations of said
6 melody string;

associating a drone string transducer with one or more drone strings of said plurality of
8 drone strings, wherein said drone string transducer generates an electrical drone string signal in
response to vibrations of said associated one or more drone strings;

10 coupling a plurality of curved frets to a neck of said musical instrument, wherein each
fret of said plurality of curved frets is adapted to distinctly change the vibrating length of said
12 melody string in response to user manipulation; and

providing electrical signals generated by said drone string transducer and said melody
14 string transducer to a multi-channel mixer which responsively generates an outgoing audio
output signal comprising a mix of received electrical signals.

59. The method according to claim 58, said method further comprising:

2 using a signal processor to generate one or more output signals responsive to at least one
electrical signal generated by said drone string transducer; and

4 providing said one or more output signals generated by said signal processor to said
multi-channel mixer.

60. The method according to claim 58, said method further comprising:

2 using a signal processor for generating one or more output signals responsive to at least
one electrical signal generated by said melody string transducer; and

4 providing said one or more output signals generated by said signal processor to said
multi-channel mixer.

61. The method according to claim 58, said method further comprising:

2 providing a plurality of drone string transducers, wherein each drone string transducer of
said plurality of drone string transducers is associated with a particular drone string of said
4 plurality of drone strings, wherein each drone string transducer of said plurality of drone string
transducers generates a distinct electrical drone string signal in response to vibrations of said
6 associated drone string; and

providing electrical transducer signals, generated by each drone string transducer of said
8 plurality of drone string transducers, to said multi-channel mixer.

62. The method according to claim 61, said method further comprising:

2 associating a drone string signal processor with one or more drone string transducers of
said plurality of said drone string transducers, wherein said drone string processor processes a
4 received electrical drone string signal generated by said associated one or more drone string
transducers to produce an output signal; and

6 providing said output signal to said multi-channel mixer.

63. The method according to claim 58, said method further comprising:

2 providing a plurality of melody strings;

providing a plurality of melody string transducers, wherein each melody string transducer
4 of said plurality of melody string transducers is associated with a particular melody string of said
plurality of melody strings, where each melody string transducer of said plurality of melody
6 string transducers generates a distinct electrical melody string signal in response to vibrations of
said associated melody string; and

8 providing electrical signals, generated by each melody string transducer of said plurality
of said melody string transducers, to said multi-channel mixer.

64. The method according to claim 63, said method further comprising:

2 providing a melody string signal processor associated with one or more melody string
transducers of said plurality of melody string transducers, wherein said melody string signal
4 processor processes a received electrical melody string signal generated by said associated one or
more melody string transducers to produce an output signal; and
6 providing said output signal to said multi-channel mixer.

65. The method according to claim 58, wherein said multi-channel mixer generates a
2 submix signal comprising a submix of said electrical signals generated by said drone string
transducer and said melody string transducer, said method further comprising:

4 using an auxiliary signal processor for generating a processed submix signal responsive
to said submix signal, wherein said processed submix signal is communicated to said multi-
6 channel mixer which responsively generates an outgoing audio signal comprising a mix of said
processed submix signal and said electrical signals generated by said drone string transducer and
8 said melody string transducer.

66. The method according to claim 58, said method further comprising:

2 providing a plurality of sympathetic strings;
providing a sympathetic string transducer associated with one or more strings of said
4 plurality of sympathetic strings, wherein said sympathetic string transducer generates an
electrical sympathetic string signal in response to vibrations of said associated one or more
6 sympathetic strings; and

using an auxiliary signal processor for generating a processed sympathetic string signal
8 responsive to said sympathetic string signal, wherein said processed sympathetic string signal is
communicated to said multi-channel mixer.

67. The method according to claim 66, said method further comprising:

2 providing a plurality of sympathetic string transducers, wherein each sympathetic string
transducer of said plurality of sympathetic string transducers is associated with a particular
4 sympathetic string of said plurality of sympathetic strings, wherein each sympathetic string
transducer of said plurality of sympathetic string transducers generates a distinct electrical
6 sympathetic string signal in response to vibrations of said associated sympathetic string; and
providing electrical signals, generated by each sympathetic string transducer of said
8 plurality of sympathetic string transducers, to said multi-channel mixer.

68. The method according to claim 67, said method further comprising:

2 using a sympathetic string signal processor associated with one or more sympathetic
string transducers of said plurality of said sympathetic string transducers, wherein said
4 sympathetic string processor processes a received electrical sympathetic string signals generated
by said associated one or more sympathetic string transducers to produce an sympathetic string
6 output signal; and
providing said sympathetic string output signal to said multi-channel mixer.

69. The method according to claim 58, said method further comprising:

2 providing a plurality of chikori strings;
providing a chikori string transducer associated with one or more strings of said plurality
4 of chikori strings, wherein said chikori string transducer generates an electrical chikori string
signal in response to vibrations of said associated one or more chikori strings; and
6 using an auxiliary signal processor for generating a processed chikori string signal
responsive to said chikori string signal, wherein said processed chikori string signal is
8 communicated to said multi-channel mixer.

70. The method according to claim 69, said method further comprising:

2 providing a plurality of chikori string transducers, wherein each chikori string transducer
of said plurality of chikori string transducers is associated with a particular chikori string of said
4 plurality of chikori strings, wherein each chikori string transducer of said plurality of chikori
string transducers generates a distinct electrical chikori string signal in response to vibrations of
6 said associated chikori string; and

providing electrical signals, generated by each chikori string transducer of said plurality
8 of chikori string transducers, to said multi-channel mixer.

71. The method according to claim 70, said method further comprising:

2 providing a chikori string signal processor associated with one or more chikori string
transducers of said plurality of said chikori string transducers, wherein said chikori string signal
4 processor processes a received electrical chikori string signal generated by said associated one or
more chikori string transducers to produce a chikori string output signal; and

6 providing said chikori string output signal to said multi-channel mixer.

72. The method according to claim 58, said method further comprising:

2 providing a plurality of harp strings;

providing a harp string transducer associated with one or more strings of said plurality of
4 harp strings, wherein said harp string transducer generates an electrical harp string signal in
response to vibrations of said associated one or more harp strings; and

6 using an auxiliary signal processor for generating a processed harp string signal
responsive to said harp string signal, wherein said processed harp string signal is communicated
8 to said multi-channel mixer.

73. The method according to claim 72, wherein each harp string of said plurality of
2 harp strings comprise bass-pitched strings.

74. The method according to claim 72, said method further comprising:

2 providing a plurality of harp string transducers, wherein each harp string transducer of
said plurality of harp string transducers is associated with a particular harp string of said plurality
4 of harp strings, wherein each harp string transducer of said plurality of harp string transducers
generates a distinct electrical harp string signal in response to vibrations of said associated harp
6 string; and

providing electrical signals, generated by each harp string transducer of said plurality of
8 harp string transducers, to said multi-channel mixer.

75. The method according to claim 74, said method further comprising:

2 providing a harp string signal processor associated with one or more harp string
transducers of said plurality of said harp string transducers, wherein said harp string signal
4 processor processes a received electrical harp string signal generated by said associated one or
more harp string transducers to produce a harp string output signal; and

6 providing said harp string output signal to said multi-channel mixer.

76. The method according to claim 58, said method further comprising:

2 using a multi-channel MIDI interface to selectively convert any of said electrical
transducer signals generated by said drone string transducer and said melody string transducer
4 into an outgoing MIDI signal.

77. A musical instrument control system comprising:

2 a touchpad responsive to user contact, wherein said touchpad generates a position signal
corresponding to the relative location of said user contact with respect to said touchpad;

4 a processor for generating an outgoing control signal comprising a timbre control signal,
wherein said timbre control signal is generated based upon said position signal; and

6 an interface providing said outgoing control signal to a sound generation system causing
said sound generation system to responsively generate an audio output signal corresponding to
8 said outgoing control signal.

78. The system according to claim 77, wherein

2 said touchpad generates a dynamic pressure signal corresponding to changes in dynamic pressure applied to said touchpad; and wherein

4 said outgoing control signal further comprises an amplitude control signal, wherein said amplitude control signal is generated by said processor based upon said dynamic pressure signal.

79. The system according to claim 77, wherein

2 said touchpad generates a pressure signal and a velocity signal, wherein said pressure signal corresponds to changes in average pressure applied to said touchpad, and said velocity signal corresponds to impact velocity of said user contact with said touchpad; and wherein

4 said outgoing control signal further comprises a pitch signal and an amplitude signal, wherein pitch signal is generated by said processor based upon said pressure signal, and said amplitude signal is generated by said processor based upon said velocity signal.

80. The system according to claim 77, wherein

2 said touchpad generates a velocity signal, wherein said velocity signal corresponds to impact velocity of said user contact with said touchpad; and wherein

4 said outgoing control signal further comprises an amplitude signal, wherein said amplitude signal is generated by said processor based upon said velocity signal.

81. The system according to claim 77, wherein

2 said touchpad generates a pressure signal corresponding to variations in pressure applied to said touchpad; and wherein

4 said amplitude control signal is generated by said processor based upon said pressure signal and said position signal.

82. The system according to claim 77, wherein
2 said touchpad generates a contact area signal, wherein said contact area signal
corresponds to the relative area of contact of said user contact on said touchpad; and wherein
4 said amplitude control signal is generated by said processor based upon said contact area
signal and said position signal.

83. The system according to claim 77, wherein said touchpad comprises a null/contact
2 touchpad.

84. The system according to claim 77, wherein said touchpad comprises a pressure
2 sensor array.

85. The system according to claim 84, wherein said pressure sensor array generates a
2 plurality of pressure measurements, wherein said plurality of pressure measurements correspond
to pressure applied to discrete locations within a defined area of said pressure sensor array.

86. The system according to claim 85, wherein said processor recognizes a particular
2 hand contact posture, of a plurality of hand contact postures, based upon said plurality of
pressure measurements generated by said pressure sensor array; and wherein
4 said amplitude control signal is generated by said processor based upon said recognized
hand contact posture and said position signal.

87. The system according to claim 77, wherein said outgoing control signal comprises
2 a signal of MIDI format.

88. The system according to claim 77, wherein said sound generation system includes
2 a music synthesizer.

89. The system according to claim 77, wherein said sound generation system
2 generates said audio output signal based upon prerecorded audio samples.

2 90. The system according to claim 77, wherein said sound generation system comprises an external sound generation system coupled with said musical instrument control system.

2 91. The system according to claim 77, wherein said sound generation system comprises an internal sound generation system integrated with said musical instrument control system.

2 92. The system according to claim 77, wherein said interface provides said outgoing control signal to an external lighting system, wherein said outgoing control signals is adapted to control light devices associated with said external lighting system.

2 93. The system according to claim 77, said system further comprising:
2 a plurality of touchpads responsive to user contact, wherein each touchpad of said plurality of touchpads generates a position signal corresponding to a location of user contact with
4 said touchpad; and wherein
said amplitude control signal is generated by said processor based upon said position
6 signal generated by each touchpad of said plurality of touchpads.

2 94. The system according to claim 77, wherein said processor generates said timbre control signal using one of a selectable plurality of translation algorithms, wherein each translation algorithm of said plurality of translation algorithms associate particular position
4 signals with a particular timbre control signals.

2 95. The system according to claim 77, wherein an incoming control signal is used to select a particular translation algorithm of said plurality of translation algorithms.

2 96. The system according to claim 77, wherein at least a portion of said touchpad is substantially transparent, said system further comprising:
an electronic visual display configured underneath said touchpad.

97. The system according to claim 77, said system further comprising:

2 a strumpad comprising a plurality of touch switches, wherein each touch switch of said plurality of touch switches generates an outgoing MIDI signal in response to user contact.

98. The system according to claim 77, said system further comprising:

2 a switch adapted to generate an outgoing MIDI signal in response to user operation.

99. The system according to claim 77, said system further comprising:

2 a potentiometer adapted to generate an outgoing MIDI signal in response to user operation.

100. The system according to claim 77, said system further comprising:

2 a pushbutton adapted to generate an outgoing MIDI signal in response to user operation.

101. A method for controlling a musical instrument comprising:

2 generating a position signal corresponding to the relative location of user contact with respect to a touchpad;

4 generating an outgoing control signal comprising a timbre control signal, wherein said timbre control signal is generated based upon said position signal; and

6 providing said outgoing control signal to a sound generation system causing said sound generation system to responsively generate an audio output signal corresponding to said outgoing
8 control signal.